DOCUMENT RESUME

ED 357 169 CE 063 310

AUTHOR Sam, Sui Chee
TITLE Training through Apprenticeship--The Singapore System. An APEC-HURDIT Network Project.
PUB DATE Nov 92
NOTE 15p.; Paper presented at the Network Conference of the Asia Pacific Economic Cooperation-Human Resource Development for Industrial Technology on "Quality Workforce through On-the-Job Training" (Singapore, November 24-26, 1992).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Apprenticeships; Educational Certificates; Educational Development; Educational Quality; Foreign Countries; *Job Training; *Labor Force Development; Postsecondary Education; Program Development; Student Certification; Student Participation; Student Placement; *Student Recruitment; Vocational Education
IDENTIFIERS *Singapore

ABSTRACT

The Institute of Technical Education (ITE) in Singapore provides skills training to school leavers through the institutional training and apprenticeship modes. The strengths of apprenticeship training are: provision of more occupational choices; greater effectiveness in meeting specific needs of industries; and opportunities for young people to earn as they learn. Programs offered under apprenticeship training lead to national technical and specific trade area certification. All apprenticeship courses encompass the two key components of on-the-job and off-the-job training. The ITE has a specified center for promotion, recruitment, and placement--the Apprenticeship Placement Center. The ITE also monitors the placed apprentices' progress for the full duration of training. Fifty-seven courses are offered under apprenticeship. Three key actions meet the challenge of increasing the participation of young persons: strengthening the image of apprenticeship, promoting apprenticeship, and introducing new programs. Strategies to overcome the barriers to participation of small and medium-sized companies include the following: introduction of a hybrid option, progressive disbursement of grants, support from ITE on the cost of training, provision of more places for off-the-job training, and establishment of the Council on Apprenticeship Training. Quality of training has been strengthened through support from Germany and training of industry trainers. (The appendices contain a list of apprenticeship courses, enrollment figures by course, and number of organizations participating by course.) (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED357169

AN APEC-HURDIT NETWORK PROJECT

TRAINING THROUGH APPRENTICESHIP - THE SINGAPORE SYSTEM

By

Mr Sam Sui Chee

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EE063 310

TRAINING THROUGH APPRENTICESHIP - THE SINGAPORE SYSTEM

A Paper for the
APEC-HURDIT Network Conference on
'Quality Workforce through On-The-Job Training'

24 - 26 November 1992

Singapore

Mr Sam Sui Chee
Deputy Director/Training
Institute of Technical Education
Singapore

TRAINING THROUGH APPRENTICESHIP - THE SINGAPORE SYSTEM

Introduction

1 The Institute of Technical Education (ITE) is a major integral component of the total manpower development infrastructure of Singapore. It is responsible for the provision and administration of skills training programmes for school-leavers and workers, as well as administration of the national skills certification and public trade tests systems. The mission of ITE is:

> "To maximise the human potential of Singaporeans through excellence in Technical Education and Training so as to develop the quality of our workforce and enhance Singapore's global competitiveness."

2 The ITE provides skills training to school-leavers through the institutional-training and apprenticeship modes. Institutional-training is full-time and is provided at ITE's 10 technical institutes. Apprenticeship training is essentially industry-based, with companies providing the substantial part of the training on-the-job and the ITE providing the necessary off-the-job training support. To-date, the emphasis has primarily been on institutional-training, with a cumulative figure of about 130,000 school leavers having been trained through this mode, compared with about 18,000 through the apprenticeship mode.

3 Whilst institutional-training continues to be the mainstay of ITE's training efforts, apprenticeship has become increasingly important for the expansion of skills training. This is in view of the following strengths of apprenticeship training:

3.1 Apprenticeship can provide more occupational choices to match the diverse abilities and interests of school leavers;

3.2 Being industry-based, apprenticeship is more effective in meeting the specific needs of the industries, especially where training through the institution mode would not be practical or cost effective;

3.3 As apprenticeship is a "earn and learn" scheme, young people have the option to benefit from a regular income if financial consideration is important to them.

4 Apprenticeship therefore has an important role in the training infrastructure provided by ITE. It is ITE's objective to strengthen and develop it fully as a viable and effective system to complement institutional-training.

The New Apprenticeship System

5 As a first approach at achieving this objective, a major review of the apprenticeship system was initiated in 1990 by the then Vocational & Industrial Training Board (the predecessor of ITE). It was aimed at strengthening the apprenticeship system by emulating certain features of the well-proven German Dual System. Following the review, the New Apprenticeship System (NAS), was launched in Jan 91 with the incorporation of the following key features:

5.1 The stipulation that industry trainers must be pedagogically trained besides having the relevant technical qualifications and industry experience. This is to ensure that companies provide quality and credible training to apprentices;

5.2 The inclusion of education in English and Mathematics as part and parcel of the training for apprentices who do not already possess the GCE 'N' level qualification in these subjects. This is to enhance the trainability and future development of apprentices;

5.3 In recognition of the key role that employers will play in enhancing the quality of training, higher levels of subsidy from the Skills Development Fund (SDF) are awarded to employers; and

5.4 So as to provide for smooth progression from school to apprenticeship training, the National Service liability for school leavers taking up apprenticeship is deferred to after completion of their apprenticeship.

The Framework of Apprenticeship Training

6 The key components of apprenticeship training are as follows:

6.1 Training Structure

The programmes offered under apprenticeship training lead to the National Technical Certificate Grades 2 or 3 (NTC-2 or NTC-3), as well as certification in specific trade areas. Depending on the trade area and the level of certification, the duration of apprenticeship can take between 1 and 3 years.

All apprenticeship courses encompass the 2 key components of on-the-job and off-the job training, which account for approximately 70% and 30% respectively of the total training duration.

On-the-Job Training (OJT)

On-the-job training is conducted at the company's premises under the supervision of qualified trainers. OJT is structured and is backed by a comprehensive documentation and monitoring system. The list of tasks that the apprentice has to learn on-the-job are documented in a log-book. The progress of the apprentice in following the task list is closely monitored by the supervisor, who will certify the completion of each task in the log-book. The supervisor will endorse completion of a task only upon the apprentice's achievement of the acceptable level of competence in the prescribed task. Through systematic planning of the various OJT tasks in the Master Schedule, the OJT requirements are timed to be accomplished within the specified duration of the apprenticeship.

Off-the-Job Training (Off-JT)

The apprentice attends his Off-JT either at an ITE institute or the company's training centre. In the case of the latter, the company has to be a designated "Approved Training Centre" (ATC) of the ITE, (for which the company has to meet stipulated requirements on staff and equipment for the conduct of training). Off-JT training at ITE institutes is scheduled one day a week, while that at the ATCs can be flexible depending on the company's schedule. The apprentice is given both theory and practical lessons during Off-JT to complement his OJT components.

6.2 Recruitment and Placement

The ITE has a specific centre for the promotion, recruitment and placement of apprentices. Named the Apprenticeship Placement Centre (APC), the centre serves as the bureau for companies and young people interested in apprenticeship.

School leavers are informed of the training opportunities in apprenticeship through promotional talks conducted at the schools by ITE officers. Announcements are also put up in the press during the intake points and applicants are invited to apply at the APC. Officers at the APC will counsel applicants on the training courses and places offered by companies. When the applicants have made their choice of the training programme and company, interviews at the companies will be arranged. Depending on the outcome, the applicants would commence training, or be offered further options should the interview turned out unsuccessful.

6.3 Monitoring

From the point of placement of an apprentice with a company, the ITE will institute a programme of monitoring of that particular apprentice's progress for the full duration of his training. Officers of ITE will visit the company regularly, at intervals of about 2 to 3 months, to:

6.3.1 Ensure that the training is in accordance with the training structure and on schedule;

6.3.2 Monitor the apprentice's progress and performance through direct observation and dialogue with his supervisor; and

6.3.3 Attend to any matters pertaining to the performance and welfare of the apprentice.

Based on the observations made, the officers will initiate the necessary follow-up with the apprentice, company or ITE Headquarter departments accordingly.

6.4 Legal Aspects

Both the apprentice and the company are subject to a legal obligation to each other as provided for under the Apprenticeship Contract. The requirements on the part of both the employer and apprentice are clearly specified and both parties are required to honour them throughout the period of apprenticeship.

7 Progress of the NAS

7.1 Expansion of Courses offered

Since the implementation of the NAS in Jan 91, a total of 21 new apprenticeship courses have been introduced. This brings to 57 the total number of courses offered under apprenticeship. This is 13 more than the 43 courses offered under the institutional-training system. Some of the new apprenticeship courses introduced were:

7.1.1 NTC-2 Architectural Drafting;

7.1.2 NTC-2 Electro Mechanical Servicing;

7.1.3 NTC-2 Electronics Servicing;

7.1.4 NTC-2 Process Operation & Control;

7.1.5 Certificate in Health Care;

7.1.6 Certificate in Office Skills; and

7.1.7 Certificate in Travel & Tourism.

A complete listing of the courses currently offered under the NAS is given at Annex A.

7.2 Enrolment of Apprentices

In the first year of the implementation of NAS (1991), a total of 1,594 new apprentices were enrolled. This was 575 or 56% more than the 1,019 new apprentices in 1990. This increase was an encouraging reflection of the positive response to the NAS.

In the first 9 months of 1992, a total of 1,437 new apprentices have already signed up, bringing the total number of apprentices in training to 2,500 as at end Sep 92. The distribution of the 1,437 apprentices by trade sectors is given at Annex B and it is envisaged that the intake of the full year 1992 will surpass that of 1991.

7.3 Participation of Companies

The number of companies that have been approved to participate in apprenticeship has increased substantially, rising from 126 in 1990 to 462 today. This is an encouraging indication of the growing interest in apprenticeship among companies. Annex C gives an indication of the spread of the participating companies by trade sectors.

8 Challenges and Responses

8.1 Increasing the Participation of Young Persons

In view of the labour shortage situation and the competitive wages offered, it has been attractive for young persons to enter into employment directly upon leaving school. Further, given the bias against apprenticeship among school leavers and parents, the challenge to ITE has been to convince and attract more school leavers into apprenticeship. The key actions taken to meet this challenge are:

8.1.1 Strengthening the image of apprenticeship

Employers have been requested to work closely with ITE to project the fact that apprenticeship is the foundation to a career, and that parents and young people should see it as a viable option to a better future. Companies have also been encouraged to promote the attractiveness of their trade areas and provide a package of remuneration and benefits that are comparable if not better than those offered to school leavers who enter into employment directly.

8.1.2 Promotion

The ITE has stepped up its promotion of apprenticeship to school leavers through talks and distribution of information materials to them prior to their leaving school. Promotion through seminars as well as the media have also been intensified.

8.1.3 Introduction of New Programmes

So as to widen the scope of apprenticeship to meet the interests of young persons, new courses in different sectors have been introduced. This is to drive home the message that apprenticeship is a system that can cater to their diverse needs and interests.

8.2 Strengthening the Support of Companies

An equally important challenge has been the securing of whole-hearted support from industry. Unless companies are committed to provide quality training, the respect for apprenticeship training is not likely to hold. Much efforts have therefore been spent on promoting to companies the value and benefits of providing apprenticeship. It has also been recognised that more emphasis should be placed on supporting the participation of the small and medium-sized enterprises (SMEs), as they comprise more than 80% of the companies and present significant scope for the expansion of apprenticeship. However, there are barriers limiting the participation of SMEs, and the following strategies have been adopted to overcome them:

8.2.1 Introduction of hybrid option

So as to enable SMEs which may not have sufficient equipment or infrastructure to fully support on-the-job training requirements, special arrangements have been made for any gaps in the OJT component to be met by provision under the "hybrid" option. Under this option, which has been implemented since Jul 92 for certain courses, companies could send their apprentices for full-time training in ITE's institutes for up to 6 months to make up for the skills areas that they cannot provide in-house.

8.2.2 Progressive Disbursement of SDF Grants

So as to assist companies, especially the SMEs, in their cash flow, a decision was taken by the SDF to disburse the grants to companies progressively rather than at the end of the apprenticeship period. With effect from Jan 92, companies are receiving a proportionate amount of the approved SDF grant at the end of each year of an apprenticeship, subject to satisfactory completion of the training schedule at each stage.

8.2.3 Support from ITE on Cost of Training

In parallel with the support from SDF, ITE has also adopted the policy of providing a 50% support on the cost of training for the Off-JT training courses provided at its institutes.

8.2.4 Provision of more places for Off-JT training

To support the efforts at encouraging more companies to participate in apprenticeship, the ITE will continue to make provision to provide for more training places for companies which need its support for Off-JT. Such needs are particularly prevalent among the SMEs and every effort is being made to accommodate their requirements.

8.2.5 Establishment of the Council on Apprenticeship Training (CAT)

Complementing the efforts of ITE, the Singapore Manufacturers' Association initiated the establishment of CAT in mid-1992 to provide a vehicle for industry to spearhead apprenticeship training. Comprising representatives from employers, Union, the SDF, the Ministry of Education and ITE, the Council is tasked to help raise the level of recognition and participation in apprenticeship.

8.3 Strengthening the Quality of Apprenticeship Training

8.3.1 Support from Germany

Under a Memorandum of Understanding established with the Ministry of Education and Sports of the State of Baden Wurttemburg, Germany, the ITE is able to receive advice and support from its German partner on matters pertaining to technical training. Experts have been despatched to Singapore to assist in the development of our system as well as evaluate and critique on our progress.

8.3.2 Training of Industry Trainers

The Industry Trainer Course for certification of company trainers comprises modules in:

- o Instructional Skills;
- o Coaching Skills; and
- o Planning & Implementing Supervised Field Training.

So far, 1,208 training places in the above modules have been taken up since the implementation of the course in 1991. In response to the demand from industry, the ITE has expanded the course with the evening part-time mode, as well as conducting the course in Mandarin to cater to the non-English speaking trainers.

Conclusion

9 Training through apprenticeship has taken a high priority in the agenda of the ITE. Through the implementation of the NAS and the various strategies that followed, a greater awareness and participation is being achieved. However, much remains to be done, and the ITE will continue to maintain its current thrust at expanding the apprenticeship system for the development of skilled manpower in Singapore.

b:apecppr.2

Annex A

APPRENTICESHIP COURSES

SECTOR	CLUSTER	COURSE
MANUFACTURING	AUTOMATION	NTC-2 Electro-Mechanical Servicing NTC-2 Electro-Mechanical Maintenance Fitting
	CHEMICALS	NTC-2 Process Operation & Control
	ELECTRICAL	NTC-2 Electrical Installation & Servicing NTC-2 Electrical Power & Machines NTC-3 Electrical Installation & Servicing
	ELECTRONICS	NTC-2 Electronics Servicing (Digital Equipment) NTC-2 Electronics Servicing (Video Technology) NTC-3 Electronics Servicing
	JEWELLERY	NTC-2 Jewellery Making
	PRECISION ENGINEERING	NTC-2 Precision Machining NTC-2 Precision Optics NTC-3 Precision Machining CoC Die-Casting Machine Setting
	PRINTING	NTC-2 Graphic Reproduction NTC-2 Offset Printing NTC-2 Offset Printing (Web-Offset) NTC-3 Graphic Reproduction NTC-3 Offset Printing
	WOODBASED	NTC-2 Furniture Production NTC-3 Furniture Production CoC Woodworking Machine Operations
TECHNICAL SUPPORT	AEROSPACE	NTC-2 Aircraft Mechanics (Electrical & Instruments) NTC-2 Aircraft Mechanics (Radar & Communications) NTC-3 Aircraft Mechanics (Airframe & Engine) NTC-3 Aircraft Mechanics (Sheetmetal)
	AUTOMOTIVE	NTC-2 Diesel Engine Mechanics NTC-2 Motor Vehicle Mechanics NTC-3 Motor Vehicle Mechanics CoC Spray Painting
	BUILDING/DRAFTING SERVICES	NTC-2 Architectural Drafting NTC-2 Civil/Structural Drafting
	MARINE & FABRICATION	NTC-2 Boiler/Pipe Fitting & Servicing NTC-2 Marine Mechanics NTC-2 Marine Steelwork NTC-2 Welding NTC-3 Boiler/Pipe Fitting & Servicing NTC-3 General Welding NTC-3 General Welding (Aluminium) NTC-3 Marine Mechanics NTC-3 Marine Steelwork
	MECHANICAL & MAINTENANCE	NTC-2 Air-conditioning & Refrigeration NTC-2 Mechanical Servicing NTC-3 Mechanical Servicing

SECTOR	CLUSTER	COURSE
SERVICE	GARMENT & TEXTILES	NTC-2 Fashion Garment NTC-3 Fashion Garment
	HAIRSTYLING	NTC-3 Hairstyling
	HEALTH CARE	Certificate in Health Care (In-patient) Certificate in Health Care (Out-patient)
	HOTEL/ CATERING	NTC-2 Food & Beverage Service NTC-2 Food Preparation NTC-2 Front Office Operations NTC-3 Food & Beverage Service NTC-3 Food Preparation
	RETAILING	Certificate in Retailing
	TRAVEL	Certificate in Travel Service
FINANCE & BUSINESS	BUSINESS STUDIES	Certificate in Office Skills

Annex B

Number of New Apprentices (Jan 92- Sep 92)

Sector	Cluster	Number
Manufacturing	Printing	148
	Electronics	143
	Precision Engineering	96
	Electrical	51
	Automation	30
	Woodbased	12
Technical Support	Marine & Fabrication	233
	Automotive	195
	Aerospace	124
	Mechanical & Maintenance	72
Service	Hotel/Catering	105
	Travel	78
	Retailing	31
	Hairstyling	29
	Garment & Textiles	23
	Health Care	20
Finance & Business	Business Studies	57
Total		1437

Annex C

Number of Organisations Approved for Participation in Apprenticeship

Sector	Cluster	Number
Manufacturing	Precision Engineering	83
	Printing	60
	Electrical	27
	Electronics	19
	Automation	17
	Woodbased	8
	Chemicals	2
Technical Support	Automotive	40
	Building/Drafting Services	22
	Mechanical & Maintenance	17
	Marine & Fabrication	15
	Aerospace	4
Service	Hotel/Catering	61
	Travel	44
	Hairstyling	16
	Garment & Textiles	9
	Retailing	9
	Health Care	4
Finance & Business	Business Studies	5
Total		462